

Curriculum Vitae

Name: Eftychia (Efi) Rousi

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1. Education

2014: PhD in Atmospheric Sciences/Climatology, obtained at the Department of Meteorology and Climatology, School of Geology, Aristotle University of Thessaloniki, Thesis: "Estimation of future climate change in the Mediterranean using Regional Climate Models", Grade: 10/10

2008: Master's Degree in "Meteorology, Climatology and Atmospheric Environment", School of Geology, Faculty of Sciences, Aristotle University of Thessaloniki, Grade: 8.82/10, Thesis: "Contribution to the study of temperature regime in the Mediterranean using a Regional Climate Model", Grade: 10/10

2005: Graduate of School of Geography of the University of the Aegean, Grade: 7.91/10

2. Professional and Research Experience

November 2019 – present: Post-doctoral researcher at Potsdam Institute for Climate Impact Research - Research Domain 1: Earth System Analysis. Currently working for the BMBF ClimXtreme project. Subproject A4. PERSEVERE: Persistent Summer Extremes over Europe due to wave-Resonance Events.

December 2016 – October 2019: Post-doctoral researcher at Potsdam Institute for Climate Impact Research - Research Domain 1: Earth System Analysis. Belmont Forum/JPI project "Globally Observed Teleconnections and their role and representation in Hierarchies of Atmospheric Models – GOTHAM".

December 2016 - present: Visiting researcher at the Institute for Environmental Studies (IVM) of the Vrije Universiteit Amsterdam

October 2015- July 2016: Post-doctoral researcher (DAAD one-year research grants) in the Meteorology Institute of the Freie Universität, Berlin, Project title: "NAO variations and climate change signals from a Self-Organizing Map perspective"

01.01.2008-30.04.2009: Research Associate in the EU-funded Research Project "Groundwater Artificial recharge Based on Alternative sources of water: aDvanced INtegrated technologies and managEment –GABARDINE" as a Data Analyst and Report co-author

25.05.2007-31.12.2008: Research Associate in the EU-funded Research Project "ENSEMBLE-based Predictions of Climate Changes and their Impacts" as a Data Analyst and Report co-author

30.04.2007-04.05.2007: Practical training at the Center of Meteorological Applications (National Program of Hail Protection) of the Greek Organization of Agricultural Insurances

26.03.2007-27.04.2007: Practical training at the weather bureau of the Hellenic National Meteorological Service at Thessaloniki's Airport "Macedonia"

01.12.2005-01.12.2006: Meteorological Observer: collection, measurement and observation of meteorological parameters at the meteorological station of the Aristotle University of Thessaloniki, Greece

05.07.2004- 02.09.2004: Practical training at the meteorological station of the Hellenic National Meteorological Service at the airport of Mytilene, Greece

3. Teaching Experience

2010-2015: Teacher of Italian language to foreigners at a private school of foreign languages for adults in Thessaloniki, Greece

Spring Semesters of 2009, 2010, 2011 and 2012: Associate at the Computer course lab of the first year at School of Geology, Aristotle University of Thessaloniki, Greece, teaching Fortran Programming Language and Microsoft Office Software

4. Languages

Greek: Native Speaker

English: Level **C2**-Proficient User: Certificate of Proficiency in English, the University of Michigan, March 1999

Italian: Level **C2**-Proficient User: Celi 5, Università per Stranieri di Perugia, December 2009, and Diploma Superiore di Lingua e Cultura Italiana (Livello C2), June 2009

German: Level **B2**-Independent User

5. Computer Skills

Very good knowledge of **R** (programming language), **CDO** (Command line operators for the manipulation of climate data), **Surfer** (mapping software), **Statistica** (statistical software).

Familiarity with **Windows** and **LINUX** environments and **shell scripting**

Excellent knowledge of **Microsoft Office** Software: ECDL Core Certificate, February 2007

Basic knowledge of **FORTTRAN** (programming language) and **ArcGIS** (mapping and spatial analysis tool)

6. Publications

Peer-reviewed Journal Articles

1. Di Capua G, Sparrow S, Kornhuber K, **Rousi E**, Osprey S, Wallom D, van den Hurk B, Coumou D (2021): Drivers behind the summer 2010 wave train leading to Russian heat wave and Pakistan flooding. *npj Climate and Atmospheric Science* [Paper #NPJCLIMATSCI-00517R3]
2. Riboldi J, **Rousi E**, D'Andrea F, Rivière G, Lott F (2021 in review): Circumglobal Rossby wave patterns during boreal winter highlighted by wavenumber/phase speed spectral analysis, *Weather and Climate Dynamics Discussions* [preprint], <https://doi.org/10.5194/wcd-2021-59>
3. Rezaei M, **Rousi E**, Ghasemifar E, Sadeghi A (2021): A study of dry spells in Iran based on satellite data and their relationship with ENSO. *Theoretical and Applied Climatology* <https://doi.org/10.1007/s00704-021-03607-y>
4. **Rousi E**, Selten F, Rahmstorf S, Coumou D (2021): Changes in North Atlantic atmospheric circulation in a warmer climate favor winter flooding and summer drought over Europe. *Journal of Climate* **31(6)**: 2277–2295 <https://doi.org/10.1175/JCLI-D-20-0311.1>
5. **Rousi E**, Rust HW, Ulbrich U, Anagnostopoulou C (2020): Implications of Winter NAO Flavors on Present and Future European Climate. *Climate*, **8(1)**: 13. <https://doi.org/10.3390/cli8010013>
6. **Rousi E**, Ulbrich U, Rust HW, Anagnostopoulou C (2017): An NAO climatology in reanalysis data with the use of Self-Organizing Maps. In T. Karacostas, A. Bais and P. Nastos (eds.), *Perspectives in Atmospheric Sciences*, Springer Atmospheric Sciences, Springer International Publishing Switzerland 2017, p. 719-724. https://link.springer.com/chapter/10.1007/978-3-319-35095-0_103

7. **Rousi E**, Anagnostopoulou C, Tolika K, Maheras P (2015): Representing Teleconnection Patterns over Europe: a comparison of SOM and PCA methods. *Atmospheric Research* **152**: 123-137. <https://doi.org/10.1016/j.atmosres.2013.11.010>
8. **Rousi E**, Mimis A, Stamou M, Anagnostopoulou C (2014): Classification of circulation types over Eastern Mediterranean using a Self Organizing Map approach. *Journal of Maps*, **10(2)**: 232-237. <https://doi.org/10.1080/17445647.2013.862747>

Scientific / Technical reports

9. **Rousi E**, Coumou D and Donner RV (2018): Atmospheric Teleconnections: Advanced Tools and Citizen Science. *Eos*, 99, <https://doi.org/10.1029.2018EO096591>. Published on 17 April 2018.
10. Maheras P (scientific responsible), Tolika K, Kostopoulou E, Anagnostopoulou C, Flocas H, Hatzaki M, Tegoulas I, **Rousi E** (2008): MILESTONES 4.3.5: Mediterranean extremes in RCM scenario runs summarised. ENSEMBLES Project final report (Project no. GOCE-CT-2003-505539), 84pp

In peer-reviewed Conference Proceedings

11. **Rousi E**, Manola I, Rahmstorf S, Coumou D (2021): Impacts of changing North Atlantic atmospheric circulation on European climate under CO₂ doubling. 15th Conference of Meteorology, Climatology and Atmospheric Physics, Ioannina, 26-29 September 2021, p. 668-673.
12. **Rousi E**, Anagnostopoulou C, Mimis A, Stamou M (2015): Constrained clustering of the precipitation regime in Greece. In GISRUK 2015 Proceedings of the 23rd GIS Research UK Conference, Leeds, 15-17 April 2015, p. 553-558.
13. **Rousi E**, Anagnostopoulou C, Mimis A, Stamou M (2014): Constrained clustering of winter precipitation in Greece. Proceedings of the 10th International Congress of the Hellenic Geographical Society, 22-24 October 2014, Thessaloniki, Greece, p.110-117.
14. **Rousi E**, Anagnostopoulou C, Tolika K, Maheras P (2014): Effects of extreme teleconnection indices on climatic parameters over the Mediterranean: present and future simulations. 12th Conference of Meteorology, Climatology and Atmospheric Physics, Heraklion, 28-31 May 2014, p. 122-126.
15. **Rousi E**, Anagnostopoulou C, Tolika K, Maheras P, Bloutsos A (2012): ECHAM5/MPI General Circulation Model Simulations of Teleconnection Indices over Europe. in C.G. Helmis and P. Nastos (eds.), *Advances in Meteorology, Climatology and Atmospheric Physics*, Springer Atmospheric Sciences, DOI 10.1007/978-3-642-29172-2_100, Springer-Verlag Berlin Heidelberg 2013, p. 709-715.
16. **Rousi E**, Tolika K, Anagnostopoulou C, Maheras P (2010): Analysis of the frequency of daily precipitation series in Greece through the 21st century: future scenarios of a Regional Climate Model (RCM). 11th Greek Conference of Geography, Athens, 4-6 November 2010, p. 25-32.
17. Maheras P, Tolika K, **Rousi E** et Kolyva-Machera F (2010): Scénarios de changements des températures extrêmes en Grèce pour la fin du XXI^{ème} siècle: simulations futures par un modèle du projet 'ENSEMBLES', 23^{ième} Colloque de l'Association Internationale de Climatologie, Rennes 2010, p. 361-366.
18. **Rousi E**, Tolika K, Anagnostopoulou C, Maheras P (2010): Scenarios of extreme temperature changes at the Eastern Mediterranean through the end of the 21st century (in Greek). 10th Conference of Meteorology, Climatology and Atmospheric Physics, Patra, 26-28 May 2010, p. 666-674.
19. Tolika K, **Rousi E**, Anagnostopoulou C, Maheras P (2010): Analysis of the dry spells in the Peloponnesus region during the 21st century: future scenarios derived by an updated Regional Climate Model (RCM) (in Greek). 10th Conference of Meteorology, Climatology and Atmospheric Physics, Patra, 26-28 May 2010, p. 766-774.

20. Maheras P, Tolika K, **Rousi E**, Kolyva-Machera F (2009): Analysis of the dry spells in the Thessaly region during the 21st century: future scenarios derived from an updated Regional Climate Model (RCM) (in Greek). 11th Conference of Hellenic Hydraulic Union, Volos, 27-30 May 2009, Volume1, p. 11-18.
21. **Rousi E**, Anagnostopoulou C, Tolika K (2008): Contribution to the study of temperature regime in the Mediterranean using a Regional Climate Model (in Greek). 9th Conference of Meteorology, Climatology and Atmospheric Physics, Thessaloniki, 28-31 May 2008, p. 489-496.
22. Feidas H, Iosifides T, **Rousi E** (2007): Correlation of migration and climate in Greece (in Greek). 1st Conference of the School of Social Sciences of the University of the Aegean, Mitilene, 31 March-2 April 2006, p. 67-75

Abstracts in Conference Proceedings

23. **Rousi E**, Kornhuber K, Beobide Arsuaga G, Luo F, Coumou D (2021): Persistent Eurasian double jets favor summer heatwaves over Europe. 2021 AGU Fall Meeting, Online, 13-17 December 2021.
24. **Rousi E**, Kornhuber K, Beobide Arsuaga G, Luo F, Coumou D (2021): Increased frequency of Eurasian double jets linked to summer heat extremes in Europe. 2021 vEGU General Assembly, Online, 19-30 April 2021.
25. Riboldi J, **Rousi E**, D'Andrea F, Rivière G, Lott F (2021): A spectral perspective on the existence of hemispheric circulation regimes. 2021 vEGU General Assembly, Online, 19-30 April 2021.
26. Di Capua, Kornhuber K, **Rousi E**, Sparrow S, Wallom D, Coumou D (2020): Wave-resonance fingerprint in the 2010 summer: a modelling experiment. 2020 EGU General Assembly, Vienna, Austria, 3-8 May 2020.
27. **Rousi E**, Coumou D, Rahmstorf S, Griffies S (2019): Summer North Atlantic SST and atmospheric circulation patterns in a changing climate. Presented at 2019 EGU General Assembly, Vienna, Austria, 7-12 April 2019.
28. **Rousi E**, Coumou D, Rahmstorf S, Griffies S (2018): Occurrence of North Atlantic SST and atmospheric circulation patterns in a changing climate. Poster presented at SPARC General Assembly 2018, Kyoto, Japan, 1-5 October 2018.
29. **Rousi E**, Kretschmer M, Lehmann J, Totz S, Coumou D (2018): Identifying remote drivers of Mediterranean rainfall using Machine learning and Causal discovery tools. Presented at Medclivar 2019 Conference, Belgrade, Serbia, 17-21 September 2018.
30. **Rousi E**, Coumou D, Ulbrich U (2018): Summer NAO flavors and their effects on climate over Europe and North America. Presented at 2018 EGU General Assembly, Vienna, Austria, 9-13 April 2018.
31. **Rousi E**, Rahmstorf S, Coumou D (2017): North Atlantic SST patterns and NAO flavors. Presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 December 2017.
32. **Rousi E**, Rust HW, Ulbrich U (2016): NAO variations and climate change signals from a Self-Organizing Map perspective. German-Austrian-Swiss Meteorology-Conference DACH, 14-18 March 2016, Berlin, Germany
33. **Rousi E**, Anagnostopolou C, Tolika K, Maheras P (2014): Present and future of teleconnection patterns affecting the climate of the Mediterranean region. In "Our Climate - Our Future; Regional perspectives on a global challenge: International REKLIM Conference", 6-9 October 2014, Umweltforum Auferstehungskirche, Berlin, Germany: Programme and abstracts. (Terra Nova; 2014/1) / P. Lemke , K. Grosfeld , R. Treffeisen and M. Weigelt (editors), Potsdam, Terra Nostra, 125 p., ISBN: 0946-8978., p. 39-40.
34. **Rousi E**, Anagnostopoulou Ch, Tolika K, Kostopoulou E, Maheras P (2010): Future estimations of precipitation in the Balkan Peninsula with the use of a Regional Climate Model. XIX Congress of the Carpathian-Balkan Geological Association, Thessaloniki, 23-26 October 2010, Abstracts Volume, p. 339-340.

Monographs

35. **Rousi E** (2014): Estimation of future climate change in the Mediterranean using Regional Climate Models (in Greek), Ph.D. in Climatology, Department of Meteorology and Climatology, Aristotle University of Thessaloniki.
36. **Rousi E** (2008): Contribution to the study of temperature regime in the Mediterranean using a Regional Climate Model (in Greek), Master Thesis in Meteorology, Climatology and Atmospheric Environment, Department of Meteorology and Climatology, Aristotle University of Thessaloniki.
37. **Rousi E** (2005): Correlation of migration and climate in Greece (in Greek). Bachelor Thesis, School of Geography, University of the Aegean.

7. Supervision

1. Cold North Atlantic sea surface temperatures and their relation to extreme temperatures in European summers, Tamara Happé, VU Amsterdam and PIK, Master Thesis, 2021.
2. Statistical and dynamical analysis of heatwaves, Sven Praast, Bachelor Internship, HS Magdeburg-Stendal and PIK, 2021.

8. Reviewer

Climate Dynamics
Journal of Climate
Theoretical and Applied Climatology
Atmospheric Research
Journal of Geophysical Research: Atmospheres
Atmosphere
Meteorology and Atmospheric Physics
International Journal of Atmospheric Sciences
Journal of Maps

9. Seminars, Summer Schools, Workshops etc

03-04.02.2020: Participation in the “Machine Learning in Earth System Science” workshop”, German Climate Computing Center (DKRZ), Hamburg, Germany.

09-13.09.2019: Participation as a lecturer in the 2nd GOTHAM Summer School, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, with the talks “Dynamics of the mid-latitude atmospheric circulation and links to extreme weather in boreal summer and winter” and “Self-Organizing Maps in Atmospheric Sciences”. Responsible of workshop/practical exercise on “Drivers behind anomalous mid-latitude low linked to extreme weather in boreal summer and winter”.

24.11.2018: Participation in the “Causality in Climate” workshop organized by Vrije Universiteit Amsterdam and Institute for Advanced Studies in Amsterdam, the Netherlands.

September – November 2018: Attendance of 4 workshops of the Basic Module “Management Skills for Research and University”, of the High Potentials - Academy for Postdoctoral Career Development for postdocs and junior professors program of the Potsdam Graduate School, Potsdam, Germany. In particular: (i) Proposal Training and Financial and Legal Issues, (ii) Project Management, (iii) Future-oriented Leadership and Team Development, (iv) Communication and Conflict Resolution.

18-22.09.2017: Organization and participation in the GOTHAM Summer School “Global Teleconnections in the Earth’s Climate System – Processes, Modelling and Advanced Analysis Methods”, PIK Potsdam, Germany.

24-28.10.2016: Participation in the “ICTP Workshop: Teleconnections in the Present and Future Climate”, Trieste, Italy, with the oral presentation: “NAO spatial variations in present and future simulations with the use of Self-Organizing Maps”

11-13.10.2011: Participation in the “1st LinkSCEEM thematic workshop for Climate Research”, Cyprus Institute, Nicosia, Cyprus

08-15.07.2009: Participation in the «1st International Latsis Summer School, Environment: Climatology, Climate Change and Impacts», Athens, Greece, with the poster: “Estimation of future climate change in the Mediterranean using Regional Climate Models-A first approach”

27-31.01.2009: Participation in the workshop of the European research project ENSEMBLES, Riederalp, Switzerland, with the poster: “Using ENSEMBLES Regional Climate Models to study extreme temperature and precipitation conditions in the Mediterranean region”

17-27.09.2008: Participation in the MedClivar summer school «Climate Variability over the Mediterranean area: Atmospheric and Oceanic Components», Rhodes, Greece, with the poster: “Contribution to the study of temperature regime in the Mediterranean using a Regional Climate Model”

01.10.2007-25.06.2008: Participation in the seminars: “Modern and innovative methodologies of tracking, studying, forecasting and confronting intense weather phenomenon, with application at the Thessaly and Macedonia regions in Greece”, Thessaloniki, Greece

10. Awards, Honors, Scholarships

DAAD Conference Grants to attend the American Geoscientists Unit (AGU) Fall Meeting (11-15.12.2017)

Award for the best paper of young scientist by the Hellenic Meteorological Society for the paper: “An NAO climatology in reanalysis data with the use of Self-Organizing Maps”, 13th Conference of Meteorology, Climatology and Atmospheric Physics (Thessaloniki, 21.09.2016)

Scholarship of the German Academic Exchange Service (DAAD): One-Year Post-doctoral Research Grants (10.2015-07.2016)

Scholarship of Excellence for PhD Candidates by the Research Committee of the Aristotle University of Thessaloniki for the academic year 2011.

Award for the best paper of new scientist in Climatology by the Hellenic Meteorological Society for the paper: “Contribution to the study of temperature regime in the Mediterranean using a Regional Climate Model”, 9th Conference of Meteorology, Climatology and Atmospheric Physics (Thessaloniki, 29.05.2008)

Performance Awards by the State Scholarships Foundation for 3 years of undergraduate studies, 2001-2002, 2002-2003, 2003-2004.

11. Memberships/Positions

PIK Postdoc Representative 2017-2019

European Geophysical Union

American Geophysical Union

Hellenic Meteorological Society

Greek Geographers Union